PhotoSceneryX for X-Plane 8, 9, 10, 11+

Last edited: June 2017

PhotoSceneryX™ (PSX) is an easy-to-use photorealistic scenery generator for X-Plane versions 8 and up. It takes orthophoto images (satellite, aerial, etc.) that you acquire and maps them to the default X-Plane DSF global scenery so you can *Fly in the REAL world.* All you have to do is get the images and use some tool such as Google Earth® to find out the coordinates of the area your images cover, either the southwestern image or the entire area. Once you have your images, just run PSX and it does the rest, and all in only about 2[1] minutes! As soon as PSX is done, you're ready to fly over your new scenery! All the hard work is done for you by PSX. All you have to do is grab that flight stick and go *Fly in the REAL world!*

Table of Contents

1 The processing time varies considerably based on the size of the area and the number of images used.

Important Items to Remember

- **PhotoSceneryX DOES NOT get the images for you!**
  You have to get the images! PSX only creates the files necessary for X-Plane to use your images. Visit http://www.photosceneryx.com/imagery for ideas on where to get images.
- **PhotoSceneryX DOES NOT place the images in the correct folder for you!**
  PhotoSceneryX does not know where your images are on your computer. PSX tells you where to place the images when it finishes processing the scenery. Just copy and paste (or move) your images into the folder PSX indicates.
- **DSFtool is required to run this version of PhotoSceneryX!**
  I've included a working version for you to use.
- **YOUR IMAGES MUST BE SQUARE AND MUST HAVE DIMENSIONS EQUAL TO SOME POWER OF TWO!!!**
- **If you're new to scenery creation:**
  See http://developer.x-plane.com/docs and http://scenery.x-plane.com/library.php for more information about the X-Plane scenery system.
- **Enter coordinates as decimal degrees!**
  No letters, no degree symbol, just a positive number for North and East and a negative number for South and West.

Release Notes

- **ALL USERS:**
  - PSX can take up a LOT of memory while it's running, so don't have too many things open while you're running PSX.
- **Windows:**
  - No special notes now.
- **Linux:**
  - WINE is required. The Linux DSFTool (as of the 12-2 release) has a bug.
- **Mac OSX:**
  - (24 June 2017) Mac OSX 10.12 implemented “App Translocation” which interferes with PSX and ITX writing the path and registration info files. A fix will be implemented soon.
  - PSX on Mac OSX is now Intel only. PowerPC is no longer supported.

PhotoSceneryX Quickstart

1. Download and prepare some images (possibly using ImageToolX to aid in the preparation of the images)
2. Start PSX
3. Under the “PhotoSceneryX” menu, go through the “Paths”, and “License” options.
4. If you've purchased, click "Registration" and register PSX.
5. Click "X-Plane Path" and select the base X-Plane installation folder, i.e. "C:\Games\X-Plane" or "/home/yourusername/games/xplane"
6. Enter a scenery name, preferably with no spaces or symbols (just good practice)
7. Enter the number of images you have from West to East (the number you're left with AFTER being processed by ITX (or manually) and ready to go into PSX/X-Plane)
8. Enter the number of images you have from South to North (the number you're left with AFTER being processed by ITX (or manually) and ready to go into PSX/X-Plane)
9. Enter the Image # Start numbers: Typically you'll leave both of these as "1" unless you added a New Block (New Block images MUST have different numbers than those used in previous blocks)
10. If you know the coordinates of the entire area covered by your processed and ready images, select ENTIRE AREA and enter the coordinates. Otherwise select you need to know the coordinates of the processed and ready SOUTHWESTERN IMAGE (ITX will tell you this when it finishes) and enter them.
11. Select the method. You should almost always use Method 1 - New Mesh.
12. Select the X-Plane version.
13. Select the pixel size of your processed and ready images (they should be square, again ITX does this).
14. If you're adding scenery to an area you've already worked on, select New Block. Otherwise, leave it unchecked.
15. Use Overlays: check this if you want to put your images on top of and in addition to the default X-Plane terrain images. You'll almost always want to leave this UNCHECKED. The only real potential use for this is that it allows the use of transparency in your images with Method 1.
16. Select the type of processed and ready images you're using.
17. Layer group and Layer offset apply only to Method 2. Read the documentation on these sections.
18. Level of Detail: Typically leave these numbers as they are. If you change this and you don't know what you're doing, your scenery might disappear when you don't want it to. Read up on Level of Detail in the PSX docs and the X-Plane scenery library docs.
19. If you want your images to cover the default X-Plane water, check Cover Water. Does not apply to Method 2. Method 2 always covers water.
20. If you have created or downloaded night (LIT) textures, check the LIT textures box.
21. Save the input to a file.
22. Click "Generate X-Plane" and wait for your scenery to be generated.
23. Once PSX is finished, put your images inside the textures folder created by PSX, i.e. C:\Games\X-Plane\Custom Scenery\[scenery name]\textures.
24. Start up X-Plane and enjoy!

Preliminary Information

DSF Files
DSF files are the heart of the scenery system in X-Plane. They contain all the scenery information (terrain elevation, road and train networks, water bodies, forests, etc.). There are two types of DSF files: overlay and full. Overlay DSF files are the type created by Overlay Editor and PSX method 2. They lay on top of or over (hence overlay) the base terrain mesh. They cannot contain the terrain mesh and can be edited in Overlay Editor. Full DSF files contain the base terrain mesh and are the type created by **PSX method 1 (recommended)**. PSX method 1 creates full DSF files for X-Plane to use that tell X-Plane how to map your images to the terrain mesh.

Any custom scenery can be made up of either overlay DSF files or full DSF files or both. **X-Plane loads the sceneries in the Custom Scenery folder in alphabetical order by folder name**. Also, X-Plane will load as many overlay DSF files for an area as it finds, but it will load only the first full DSF it finds. After it finds a full DSF for an area, it stops loading all DSF files for that area, be it overlay or full. Thus, if you have an overlay DSF file in a scenery that comes alphabetically after a scenery that includes a full DSF, and they cover the same area, the overlay scenery will not get loaded when X-Plane loads that area. This is important for the "New Block" option in PSX. **When using "New Block" you need to make sure you use the SAME SCENERY NAME for both blocks to avoid having X-Plane not show one of the blocks**. Because, remember, PSX Method 1 generates full DSF files and only one full DSF can be loaded for any one area. By using the same scenery name for both blocks you ensure that both of them are included in the same DSF file, and thus both are loaded into X-Plane.

DSF file naming is such: +33-089.dsf (for example) - This means that +33 is the SOUTHERN latitude, and -089 is the WESTERN longitude. Thus, the DSF file +33-089.dsf covers from +33 to +34 latitude and -089 to -088 longitude. See http://developer.x-plane.com/docs and http://scenery.x-plane.com/library.php for more information about the X-Plane scenery system.

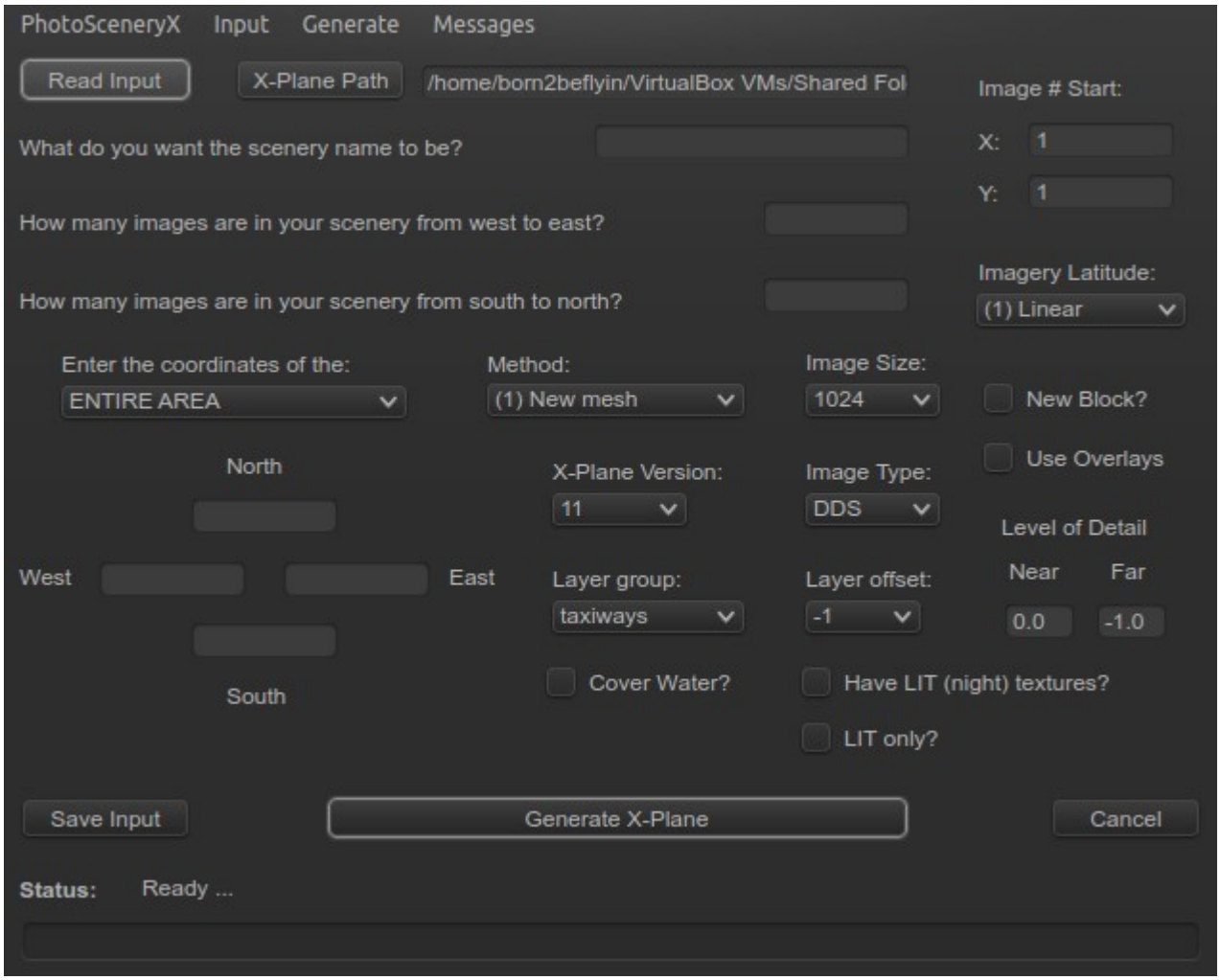
Directory Structure

PhotoSceneryX creates the directory structure for you. After running PSX, you're directories will be set up like this:

X-Plane Main Folder
---Custom Scenery
------[Your photo scenery main folder]
---------Earth nav data
----------+30-090 (your nav data section folder)
----------+33-089.dsf (your nav data degree square .dsf file created by PSX)
---------polygons
----------Your .pol files will go here (Method 2 - created and placed by PSX)
---------terrain
----------Your .ter files will go here (Method 1 - created and placed by PSX)
---------textures
----------Your image files go here (you place your images here after running PSX)

PSX User Interface

NOTE: Hints are available for most GUI items by hovering your mouse over the item in PSX.



Getting started

Before trying anything with PSX, go the the PhotoSceneryX menu and run through each of the Paths, License, and Registration options.

What do you want the scenery name to be?

This is name of your scenery. It's the name you want to appear as **[Your photo scenery main folder]** in the above folder structure. It's good practice to input this without spaces or special characters, but PSX should be able to handle these.

How many images are in your scenery from west to east?

The number of images in your scenery from west to east. Just a single integer.

How many images are in your scenery from south to north?

The number of images in your scenery from south to north. Just a single integer.

Enter the coordinates of the:

Select the option that applies to the coordinates you've entered: are they of the Entire Area or just the Southwestern Image?

North, South, East, West

Input fields for the coordinate values. Do not enter commas, degree symbols, apostrophes, or quotes. Just enter positive or negative decimal degrees.

Image Size

Select the size of your input images in pixels. **Your images must be square!**

Image Type

Select the type of images you are using.

PSX Methods

PSX has two methods to choose from when creating photorealistic sceneries.

Method 1: New Mesh
Creates a Full DSF. ***This is the preferred method***. Method 1 reads in the X-Plane default DSF terrain mesh and reconstructs the base mesh, mapping your images to the surface. This method allows for the best performance in X-Plane. There are now two options available with Method 1. These options are selectable via checking/unchecking the **Use Overlays** option.

Use Overlays unchecked:

- Notes:
  - Layer Group and Layer Offset do not apply to this method.

- Pros:
  - Runs the fastest in X-Plane.
  - The images are embedded in the base mesh, so the scenery is perfect. No z-buffer thrashing because there are no overlays.

- Cons:
  - Can take a long time for PSX to generate the scenery if you're covering a large area. If you were to cover an entire DSF tile, it could take about 10 - 15 minutes or more for PSX to generate the scenery. This is dependent on the number of images your are using, so processing time does vary considerably.

Use Overlays checked:

- Notes:
  - Layer Group and Layer Offset do not apply to this method.

- Pros:
  - Allows transparency in your images to show through to the underlying terrain.
  - Runs the second fastest in X-Plane.

    - The images are added as overlay patches on top of the base mesh, so the scenery is perfect. No z-buffer thrashing.

- Cons:
    - Can take a long time for PSX to generate the scenery if you're covering a large area. If you were to cover an entire DSF tile, it could take about 10 - 15 minutes or more for PSX to generate the scenery. This is dependent on the number of images your are using, so processing time does vary considerably.

Method 2: Draped Poly

Creates an Overlay DSF. This method uses draped polygons to cover the scenery area. The draped polygons of your images are laid on top of the terrain base mesh, so X-Plane draws both the default base mesh and your overlay images with each frame. This can reduce framerate significantly with large sceneries. **Thus, method 2 is NOT the recommended method.**

- Notes:
    - Cover water does not apply to this method. Draped polygons always cover the default X-Plane water unless you make the water areas of your images transparent.

- Pros:
    - Creates an Overlay DSF that is directly editable in Overlay Editor
    - Takes only a few seconds for PSX to generate the scenery.
    - Covers the terrain perfectly. No z-buffer artifacts.

- Cons:
    - Slows down X-Plane because you have two layers of scenery for every location in the scenery: the base mesh and the overlay photos. X-Plane doesn't handle draped polygons very efficiently in the context of orthophotos. I don't have a very high-end computer, and I took a hit of about 10 fps when using draped polygons in a small scenery.

Batch

This function is mainly for commercial developers. It allows you to set up a batch run of PSX to generate multiple sceneries at once. The batch input file is simply a text file listing the PSX input files to be used in the batch run. The PSX input file paths are listed, one per line, in the batch input file. An example batch input file might be:

Sample Batch Input File (do not include this line)

```
SceneryInputFile01.txt
SceneryInputFile02.txt
SceneryInputFile03.txt
SceneryInputFile04.txt
SceneryInputFile05.txt
```

Click the “Batch” button, select the batch input file, click Generate X-Plane Files, and walk away until it's done.

Batch mode can also be run via the command line so you can script PSX to run multiple batches from a custom script. Simply use the “-b” command line option followed by the path of the batch file. PSX will start and run the batch file the same as if you'd chosen it from the GUI.

The PSX GUI remains visible while processing batch files. Do not try to interact with the PSX GUI while processing batch files as undesirable results or errors may occur.

Image # Start

Use this to tell PSX the starting image number of your images in the X and Y directions (Lon and Lat respectively). This can be used to add a second set of images to a DSF tile that has already been processed, i.e. add a new layer using "New Block," or if you use an image program that outputs images starting at a number other than '1'.

Imagery Latitude

Use this to vary the type of latitude variation to compute across your imagery. Most sources will need a Linear variation to display properly, but some could require the Mercator option. This basically changes how your images are mapped to the underlying terrain in the North/South direction.

New Block?

Applicable only to Method 1 (New Mesh). This tells PSX that you want to create a new block/layer of scenery in an already-processed DSF, i.e. you've already created a scenery in some 1x1 degree part of the world and you'd like to add a second scenery or new layer to that same 1x1 deg section.

An important thing to remember is that you MUST use the same scenery name for both blocks of scenery to make them both show up in X-Plane. See the "DSF Files" section above for more info.

Important for using New Block:

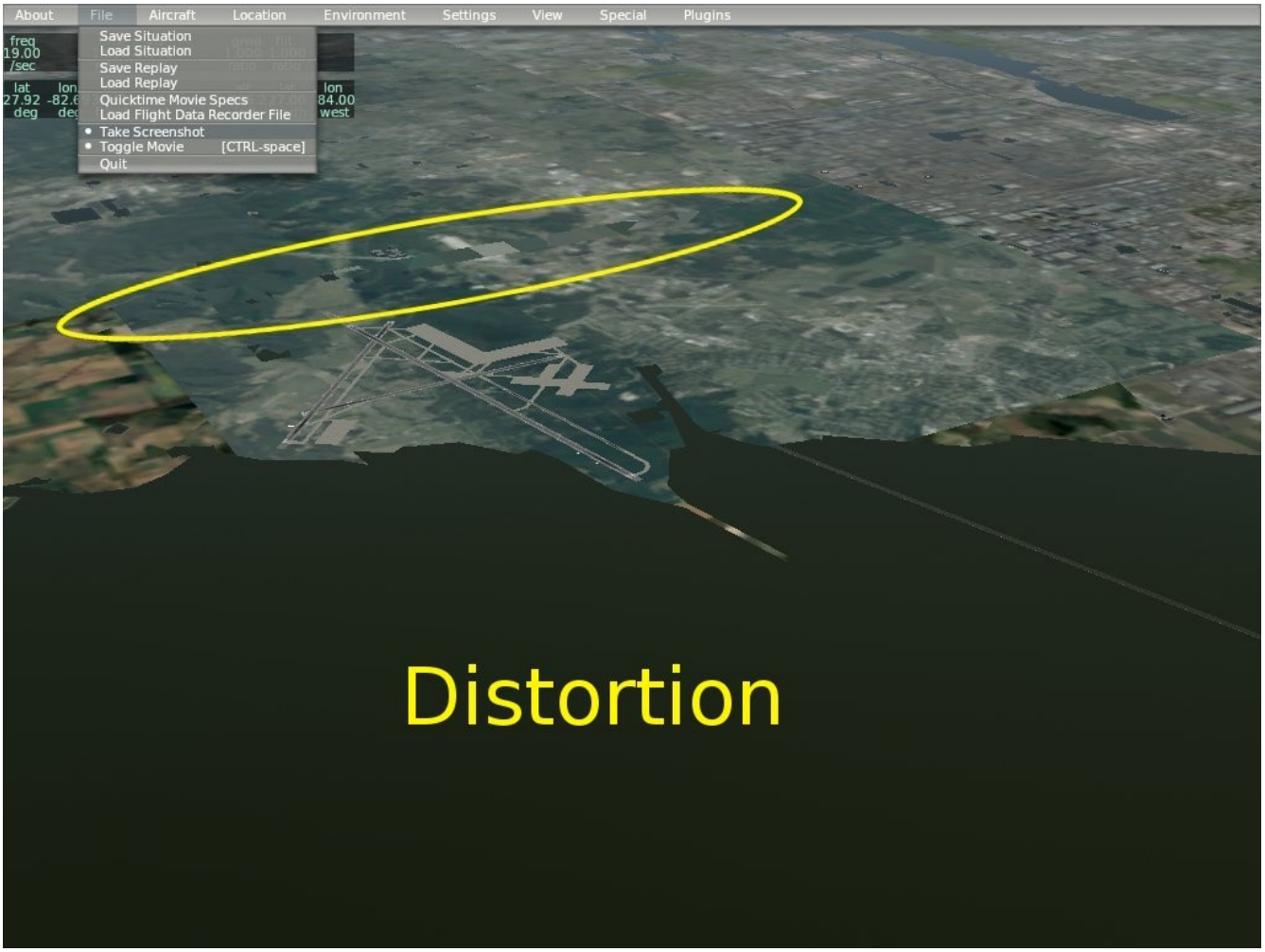
- Must use the same scenery name as previous sceneries within the same 1x1 degree area
- Should cover an area completely outside of a previously covered area. Should not use same coordinates as a previously covered area. If the new block is adjoining an old block, use a coordinate that is slightly different than the old block's edge coordinate (see the paragraphs below).
- Your New Block image names cannot be the same as old blocks. Use ImageToolX and the Image # Start fields to accomplish this.

There is one thing about using New Block that does happen sometimes that I'll illustrate below with screenshots. The first screenshot shows two blocks of scenery for the Clearwater, FL, USA area with Cover Water unchecked and the input files as posted below. Notice the highlighted fields.

```
(Input file for block 1)
#### PhotoSceneryX Input File ####

[Paths]
Xplane = F:\Games\X-Plane
DSFTool = F:\Games\DSFTool.exe
7zip = F:\Games\7za.exe

[Names]
Scenery = kpie
```

```
[Images]
LonImages = 21
LatImages = 15
XImageStart = 45
YImageStart = 65
ImageSize = 256
ImageType = DDS

[LOD]
NearLOD = 0.0
FarLOD = -1.0

[InitCoords]
CoordsType = EA
LonWest = -82.73255
LonEast = -82.67487
LatSouth = 27.8900
LatNorth = 27.92645

[Other]
Version = 9
Method = 1
ImageryLatitude = 1
LayerGroup = taxiways
LayerOffset = -1
CoverWater = no
LITtextures = no
NewBlock = no
UseOverlays = no

##################################
(Input file for block 2 - this way can cause distortion)
#### PhotoSceneryX Input File ####

[Paths]
Xplane = F:\Games\X-Plane
DSFTool = F:\Games\DSFTool.exe
7zip = F:\Games\7za.exe

[Names]
Scenery = kpie

[Images]
LonImages = 42
LatImages = 28
XImageStart = 45
YImageStart = 37
ImageSize = 256
ImageType = DDS

[LOD]
NearLOD = 0.0
FarLOD = -1.0

[InitCoords]
CoordsType = EA
LonWest = -82.73255
LonEast = -82.6172
```

```
LatSouth = 27.8221
LatNorth = 27.8900

[Other]
Version = 9
Method = 1
ImageryLatitude = 1
LayerGroup = taxiways
LayerOffset = -1
CoverWater = no
LITtextures = no
NewBlock = yes
UseOverlays = no

###################################
```

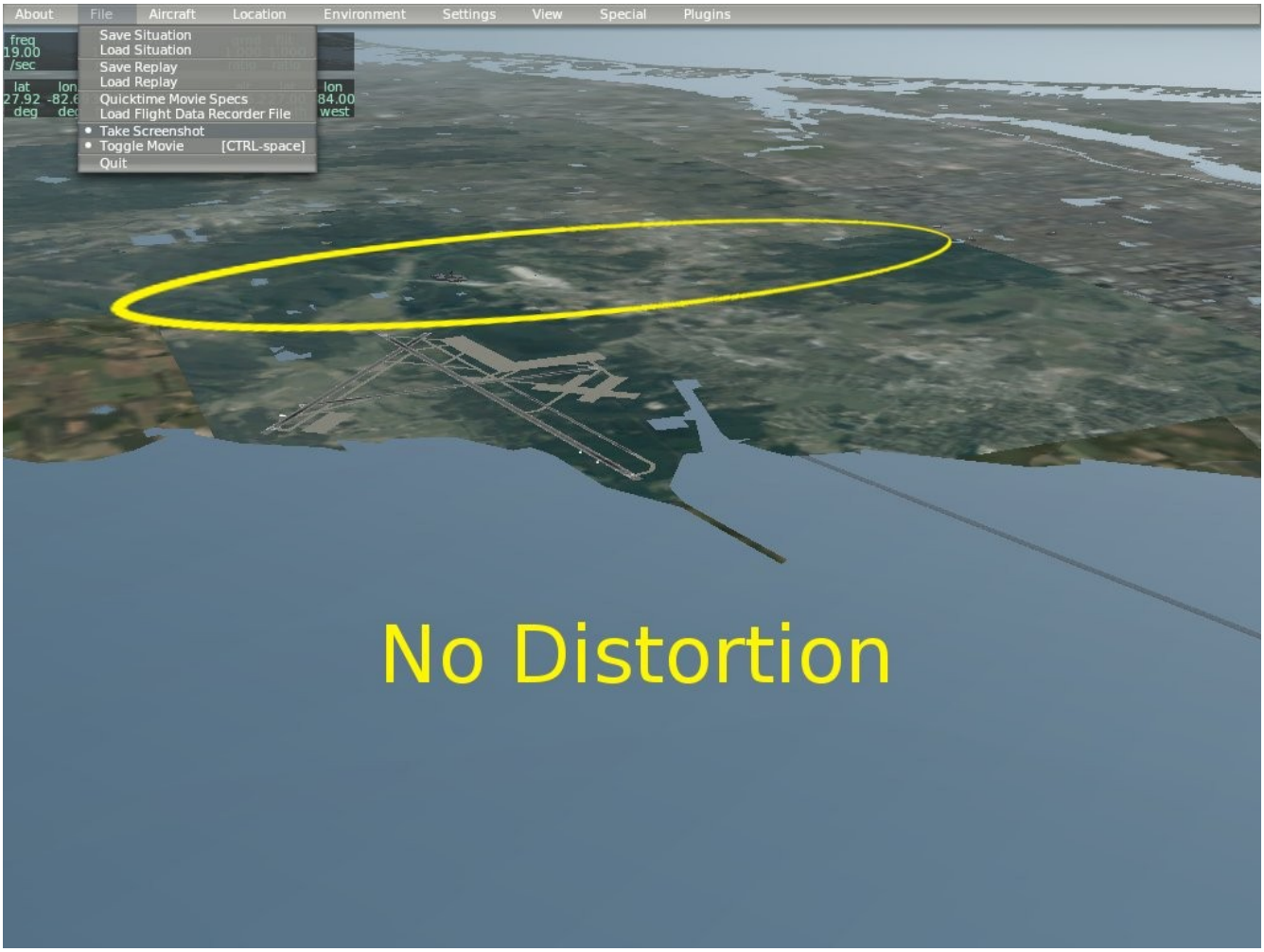


The images are some of my own that are not for the Clearwater area. At the common border of the two blocks, you can see the scenery is distorted. This is due to using the exact same number for the north side of block 2 as you used for the south side of block 1 (the highlighted fields above).

What you need to do for the second block is put it right next to the border but not touching the border, i.e. change the north coordinate for block 2 from 27.89 to 27.889999 and that will make the border work nicely. This is what I did for the second screenshot below. Thus, the second input file should be:

```
(Input file for block 2 - this way should remove any distortion)
```

```
#### PhotoSceneryX Input File ####

[Paths]
Xplane = F:\Games\X-Plane
DSFTool = F:\Games\DSFTool.exe
7zip = F:\Games\7za.exe

[Names]
Scenery = kpie

[Images]
LonImages = 42
LatImages = 28
XImageStart = 45
YImageStart = 37
ImageSize = 256
ImageType = DDS

[LOD]
NearLOD = 0.0
FarLOD = -1.0

[InitCoords]
CoordsType = EA
LonWest = -82.73255
LonEast = -82.6172
LatSouth = 27.8221
LatNorth = 27.889999

[Other]
Version = 9
Method = 1
ImageryLatitude = 1
LayerGroup = taxiways
LayerOffset = -1
CoverWater = no
LITtextures = no
NewBlock = yes
UseOverlays = no

##################################
```



You can't yet do true multiple layers in PSX. This will add a new section of scenery to some current scenery, but it does not create a new layer, i.e. you can't set the LOD values differently and expect to see the first scenery from distance a to b and the second from c to d. It's not programmed to be like that yet. I'll try to add this to a future release.

Use Overlays

Checking this tells PSX to use Overlay patches with Method 1. This option, when checked, keeps the underlying X-Plane base mesh triangles intact (PSX does NOT replace the X-Plane base mesh) and "overlays" photoscenery patches on top of the base layer. This allows the user to include transparency within the imagery, primarily for the purpose of blending edges nicely to/from the photoscenery area. This option forces X-Plane to draw extra information, so performance may take a slight hit.

Level of Detail

This determines the range of distances at which your scenery will be visible in X-Plane. The default PSX values for these will cause your scenery to be visible at every distance. I'm not sure if the unit is feet or meters, but we'll assume meters for now. For example if you wanted your scenery to be visible from 0 to 3000 meters you would enter: NearLOD=0.0 FarLOD=3000. It's that simple.

Layer Group and Layer Offset

Applicable only to Method 2 (Draped Polygons). This allows you to choose the layer group into which your polygons are placed. For more information about the individual layer groups, see the Object 8 definition inside the Library at http://developer.x-plane.com/?article=obj8-file-format-specification and http://scenery.x-plane.com/library.php?doc=obj8spec.php. The layer offset is the offset in layers of the draped polygons from the layer group. A positive offset places your draped polygons "after" the layer group, a negative offset places them "before."

Cover Water?

Applicable only to Method 1 (New Mesh). If this option is checked, your images WILL COVER the default water areas in X-Plane and the water areas within your scenery look like the water in your images and will physically act like land. If this is not checked, your images will not cover the default water areas and the water areas within your scenery will look and act as usual. Draped polygons always cover the default X-Plane water unless you make the water areas of your images transparent **(not recommended)**.

Have LIT (night) textures?

Check this if you have LIT (night) textures also and would like them to be included in your scenery. LIT textures must be named like “LIT_KSTF_1_1.dds” and placed in the "textures" folder as outlined above for use with PSX.

LIT only?

Check this if you have **ONLY** LIT (night) textures and would like them to be included in your scenery. LIT textures must be named like “LIT_KSTF_1_1.dds” and placed in the "textures" folder as outlined above for use with PSX.

A little about images

I could include in PSX a tool for getting the images from some online server, and indeed I have written one, but the legality of releasing such a tool to the public is questionable, thus I cannot make it available. To that end, you have to acquire and name the photoscenery images for use with PSX. ImageToolX can help you do this, but again you must acquire the images on your own. To name the images, you'll use a prefix (KSTF, photo, etc.) and a coordinate. The coordinate is the same as an X, Y coordinate. In your scenery, the southwestern image has the coordinate 1_1. The image immediately to the east has the coordinate 2_1. The image immediately to the north of the southwestern image has the coordinate 1_2 and so on. You HAVE TO name your images according to this grid. ImageToolX can do this for you to simplify the process. Place the images in the proper directory as outlined above. The final image name should be something like "KSTF_1_1.png". Follow this naming convention EXACTLY! The prefix can be anything, just make sure you get the coordinates right and you use underscores to separate them.

X-Plane 8 supports only PNG images while X-Plane 9 supports both PNG and DDS images. ImageToolX will create either of the two for you. When uncompressed, PNG and DDS images are roughly the same size. When compressed, DDS has a great advantage over PNG. DDS also has the advantage of mipmaps, which could potentially increase performance in X-Plane if utilized properly. Which image format you choose is your choice, but I use DDS compressed with DXT1 to get the smallest image size possible.

Texture paging was recently added to the list of cool X-Plane features. Texture paging allows X-Plane to "resample" loaded images down to a lower resolution so they take up less memory while you're flying. This "resampling" is done based on your aircraft's proximity to the loaded image. Thus, the image resolution is decreased as you move farther away from the image and increased as you approach the image. Ben once told me he feels orthophoto sceneries using texture paging will perform best with 1024x1024 pixel textures as this would allow more finely tuned "resampling" (the entire image must be resampled, no partial resampling) than 2048x2048 pixel textures while maintaining a relatively low image count.

YOUR IMAGES MUST BE SQUARE AND MUST HAVE DIMENSIONS EQUAL TO SOME POWER OF TWO!!!

X-Plane 8 supports images up to 1024px in size and X-Plane 9 supports up to 2048px in size. Following the power of two rule you can have images in the following sizes in pixels: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, or 2048. I generally use 1024 for compatibility with X-Plane 8, but I have used 2048 to reduce the image count in X-Plane 9. I think I remember Ben saying it is better to have fewer large images than many smaller images. In X-Plane 9, if you use DDS with mipmaps, you must provide mipmapping all the way down to 1x1 pixel. X-Plane requires the full range up to the full image size.

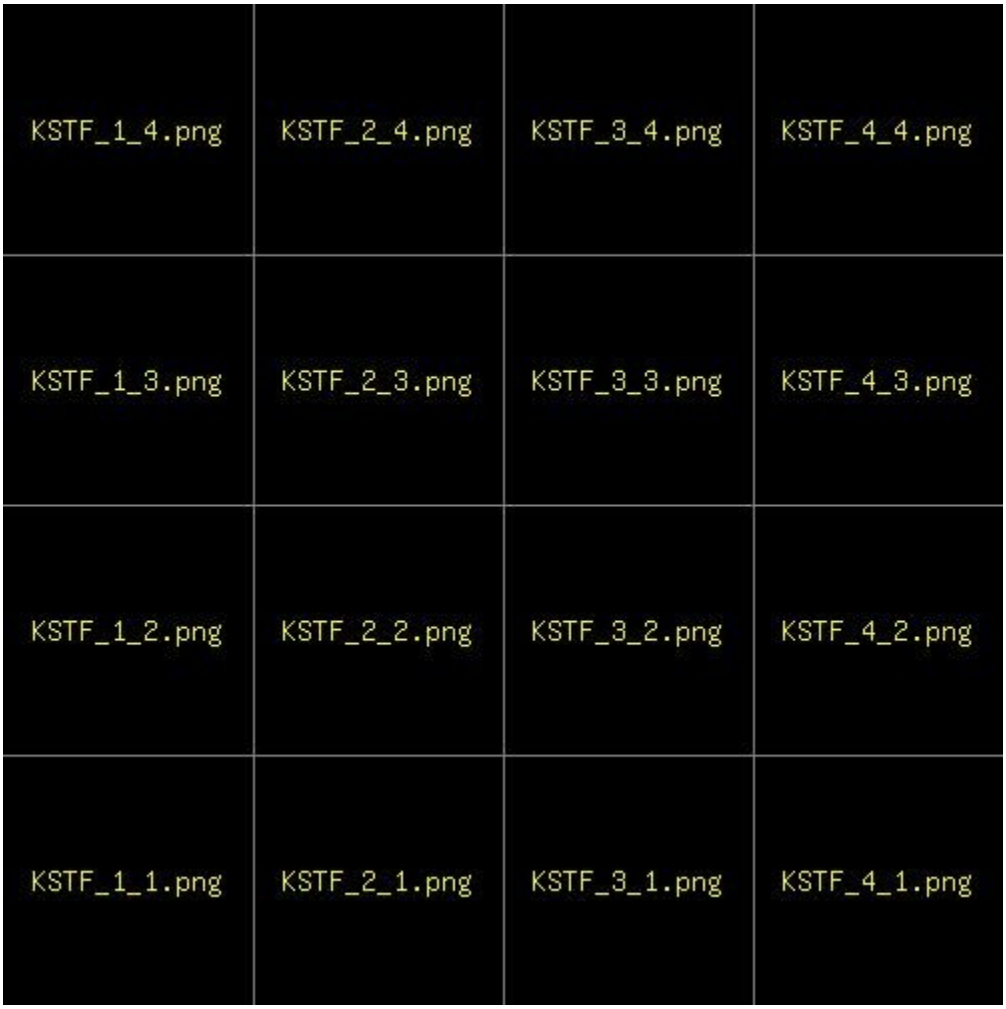
Your images can be any resolution you like. The resolution of your images determines how much land is covered per image. The following example should shed some light on this. Let's say you want to cover an area that is 10.24 kilometers east to west and 10.24 kilometers north to south. This is 10240 meters in each direction (of course). Now, you CAN cover this entire area with a single zoomed out image of 1024 x 1024 pixels that covers the entire area exactly. If you choose this route, your image resolution is 10 meters per pixel (10240 meters / 1024 pixels = 10 meters per pixel each direction). This simply means that each pixel in your image covers exactly 10 meters x 10 meters = 100 square meters of land area. Now, let's say you decide to use 100 zoomed in images (1024 x 1024 pixel) to cover this 10.24 kilometer x 10.24 kilometer area. This means you have 10 images from west to east and 10 images from south to north (10 x 10 = 100 images). This way, each image covers exactly 10240 meters / 10 images = 1024 meters per image in each direction. Now, what's the resolution? 1024 meters / 1024 pixels = 1 meter per pixel in each direction. This mean that each pixel covers exactly 1 meter x 1 meter = 1 square meter of land area. If each pixel covers a smaller land area, you have greater detail. Eureka!!! So you can have more detailed scenery if you use many high resolution images rather than using fewer low resolution images.

The tradeoff is framerate. The choice is up to you. You pick the resolution you want your scenery to be at. Cover it with 100 highres images or cover it with 10 lowres. It's up to you. But be aware, the more images you use, the more video ram you need in order to load all the images. X-Plane loads all the images for an area AT ONCE! Ben is working on making X-Plane load images as needed. Bottom line, if you want decent framerates, don't completely fill up your video ram. So, I guess I'm saying that getting a good framerate for now will take a bit of trial and error, at least until this method gets a little more testing. However, I have read a few articles recently that seem to agree it's better to have more smaller images than fewer large images. Supposedly this takes less of a hit on computer resources.

After you have your images ready, all you have to do is tell PhotoSceneryX how many images you have in each direction, and the coordinates of either the southwestern image or the entire coverage area. That's it. PhotoSceneryX does the rest. Once PhotoSceneryX finishes generating your scenery, just place your images where PSX tells you to and you're ready to fly.

The image grid

Let's assume your scenery name is KSTF and you're using a 4x4 grid of PNG images (16 images total). Your image grid and image names should be like this:



Running PSX

Open PhotoSceneryX.

Generate X-Plane

Read an input file or enter the values in the fields manually. The input file is simply an INI-style text file that contains all the values that go into the fields. See the sample below.

Sample Input File (you can include the ###### lines if you wish)

```
#### PhotoSceneryX Input File ####

[Paths]
Xplane = F:\Games\X-Plane
```

```
DSFTool = F:\Games\DSFTool.exe
7zip = F:\Games\7za.exe

[Names]
Scenery = Blacksburg1m

[Images]
LonImages = 2
LatImages = 2
XImageStart = 1
YImageStart = 4
ImageSize = 2048
ImageType = DDS

[LOD]
NearLOD = 0.0
FarLOD = -1.0

[InitCoords]
CoordsType = SW
LonWest = -80.4212
LonEast = -80.3979
LatSouth = 37.1948
LatNorth = 37.2132

[Other]
Version = 9
Method = 1
ImageryLatitude = 1
LayerGroup = taxiways
LayerOffset = -1
CoverWater = yes
LITtextures = no
NewBlock = no
UseOverlays = no

###################################
```

With information in the required fields, hit the "Generate X-Plane Files" button. How long the program takes to run depends on which method you choose. If you use Method 1 (the preferred method by me), the time required depends mostly on how large a geographical area is being covered and can take anywhere from a few minutes to an hour or more. Method 2 finishes in seconds. Once complete, you may close PhotoSceneryX.

Place your images into the directory structure as outlined above. You're done! Go fly!

Generate AC3D

If you want, you can generate a fully textured AC3D file by pressing the button "Generate AC3D File". A *.ac file (the * is your scenery name) is created containing a fully textured 3D surface of your scenery that you can view in AC3D! Before viewing the AC3D file, YOU MUST PLACE THE*.ac FILE IN THE FOLDER CONTAINING YOUR IMAGES so the textures will show up in AC3D! I use AC3D mainly for debugging my code without having to open X-Plane, so I've included the functionality in PSX. An example of the AC3D output is below.

PSX and Other Programs

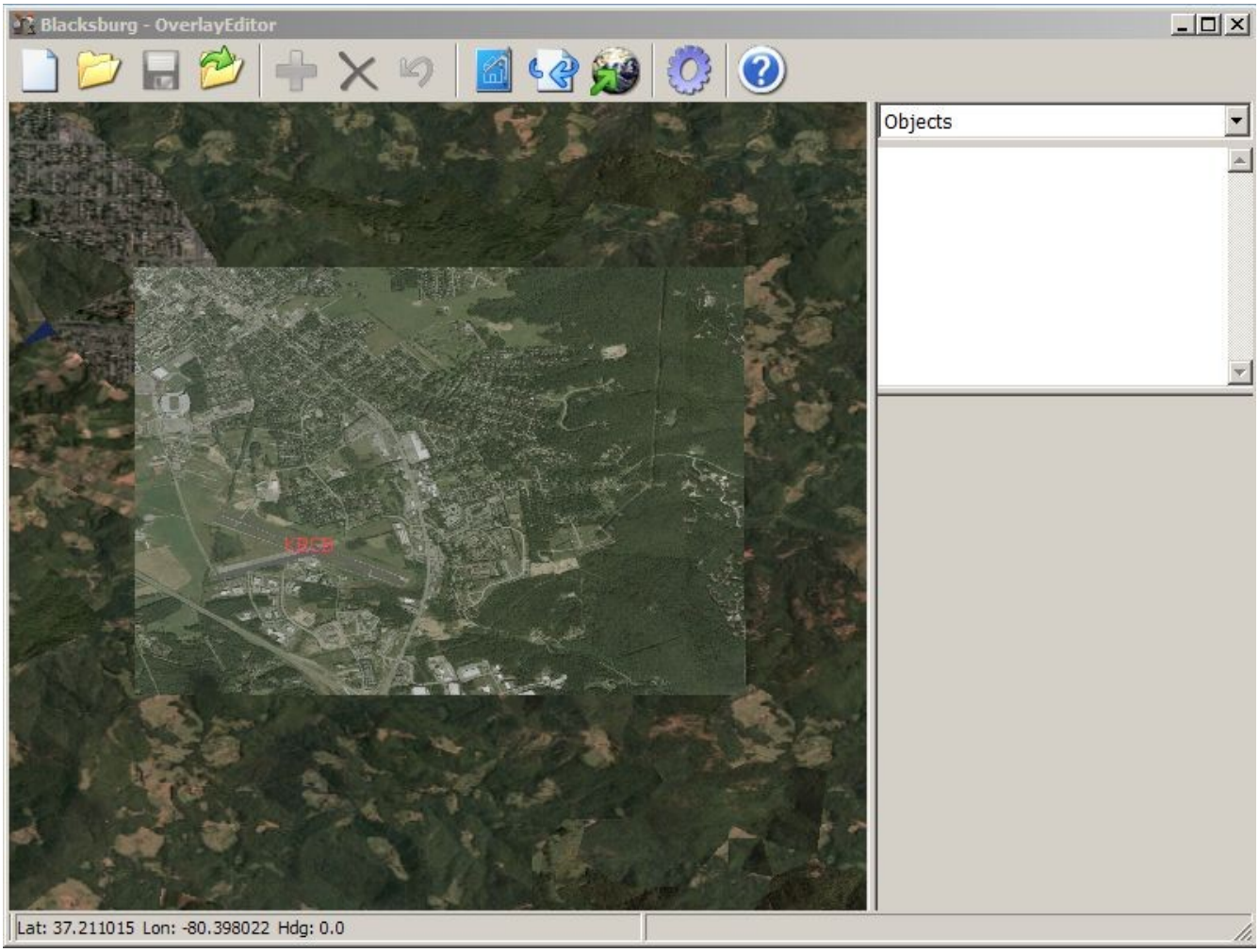
DSF Overlay Editor

To view the PSX scenery in Overlay Editor (for object placement and such), get Overlay Editor v2.01 or later and use the "Go to Airport" button and go to an airport within the scenery area. You should see the photo images in Overlay Editor. I checked it just now on Windows and it works fine. You can't use the "Open" button and open PSX-generated sceneries generated with method 1 because Overlay Editor can't edit full DSF files, only overlay DSF files. PSX method 1 generates full DSF files. Method 2 generates overlay DSF files that ARE directly editable via "Open" in Overlay Editor.

Let's say you're starting a new scenery from scratch and you want photorealistic scenery with custom objects. First use PSX to generate the photorealistic scenery using method 1 and give it a name, let's say "PSXscenery". Then open Overlay Editor and use the "Go to Airport" button to go to an airport within "PSXscenery". You should see your new photorealistic scenery in Overlay Editor. Create your new overlay scenery and place your objects and such. Name the overlay scenery "OEscenery". Make sure that the overlay scenery name comes alphabetically before the PSX scenery name. By naming the overlay scenery "OEscenery" and the PSX scenery "PSXscenery", "O" comes before "P" in the alphabet, so your overlay scenery will show up on top of the PSX scenery in X-Plane. If you were to name the overlay scenery "Zoverlay", the overlay scenery would not be loaded because X-Plane stops loading scenery for an area as soon as it finds a full DSF (remember the DSF generated by PSX method 1 is a full DSF). So the overlay scenery would NOT show up in X-Plane since "Z" comes after "P".

If you use method 2 to generate the PSX scenery (not recommended), you CAN use the "Open" function in Overlay Editor to directly open and edit the PSX-generated scenery. I'm not sure if the scenery will show up in Overlay Editor if it was generated using method 2. It should show up. I always use method 1.

The following is an image of the BlacksburgDemo scenery inside Overlay Editor created with PSX method 1 via the tutorial at www.photosceneryx.com. This was viewed in Overlay Editor by clicking the "Go to Airport" button and going to KBCB.



AlpilotX's forests

Make sure your scenery folders come alphabetically after the forest install folder(s) and everything should work fine.

Program History

Last edited: June 2017

IMPROVEMENTS FOR VERSION 1.5

- Added X-Plane 11 compatibility
- Added LIT only to support users having only LIT textures

IMPROVEMENTS FOR VERSION 1.4

- Added X-Plane 10 compatibility
--- Support for 7-zipped DSF files
--- Support for raster data in DSF files
--- Support for 4096 pixel images

- Added menu bar (removed some button clutter)
- Added command line batch option
- Added ability to select the latitude variation of your imagery
- Added ability to use overlay triangles in PSX Method 1 (Use Overlays)

IMPROVEMENTS FOR VERSION 1.3

- PSX now has two methods to choose from to create photorealistic sceneries.
---- Method 1: New Mesh = replace default mesh with orthophoto-mapped mesh
---- Method 2: Draped Poly = uses draped polygons
- You can choose to cover water areas or not (Method 1 only)
- Added the ability to span multiple (unlimited) DSF files (cross lat-lon degree boundaries)
- The overlay objects are now included by default in X-Plane v9
- The water borders are excluded inside the scenery area if you cover water (Method 1 only).
- Altered the algorithms to speed up the code
- Starting image number may be arbitrarily set
- May create multiple blocks/layers of scenery on a single DSF
- Texture paging support added
- New messaging system added
- Multithreading

IMPROVEMENTS FOR VERSION 1.28

- PSX now has three methods to choose from to create photorealistic sceneries.
---- Method 1: New Mesh = same method as older versions
---- Method 2: Big Image = uses one large image to cover the area
---- Method 3: Draped Poly = uses draped polygons
- You can choose to cover water areas or not (Method 2 only).
- Fixed the error where PSX writes a comma instead of a decimal on international systems.
- You can now select the layer into which you want your polygons placed (Method 3 onlyl).

IMPROVEMENTS FOR VERSION 1.27

- Finished the "smart" terrain reading/generation.
- Uses multi-threading to improve performance.
- Added Level of Detail control.
- PhotoSceneryX now creates your directory structure, generates the required files, and places the files (except your images) in the directory tree for you. All you have to do is place your images in the correct folder AFTER running PhotoSceneryX.
- Fixed the help file bug and made some updates to the help file content.
- Changed the input file format to INI style.
- Changed the image coordinates input layout to something more intuitive.

IMPROVEMENTS FOR VERSION 1.26

- Each primitive is now only 12 vertices. Should solve some issues with DSF2TXT limitations.
- Small fix that could've effected some using relatively short (number of lines) .dsf files.

IMPROVEMENTS FOR VERSION 1.25

- Fixed error on international systems
- Improved terrain reading (See NOTE)
- The AC3D file is now a fully textured 3D surface. You must place the .ac file in the same directory as your images. (A screenshot is attached)

NOTE: The new terrain reading is a partial implementation of my "smart code". It should give better results for MOST areas, but if the area you are trying to cover contains a very small number of X-Plane vertices, then version 1.25 may actually produce worse results than version 1.24. This is due to the fact that the new terrain reading is only PART of my new "smart code" for terrain reading. The rest of the code will be somewhat lengthy to implement, so it's going to take a while longer to finish. I'm sorry if this is an inconvenience.

IMPROVEMENTS FOR VERSION 1.24

- Added DSF file checker to verify use of the correct DSF file.
- Added input coordinate checker to verify the integrity of the input coordinates.
- Added check for zero default vertices within the input region.
- Minor optimizations to decrease processing time.

IMPROVEMENTS FOR VERSION 1.23

- Added a basic help file.
- Added "License" and "Help" links

IMPROVEMENTS FOR VERSION 1.22

- Made more minor changes that could have been the cause of a particular problem experienced by some.
- Separated X-Plane file generation from AC3D file generation.
- Made minor optimizations that decreased processing time.

IMPROVEMENTS FOR VERSION 1.21

- Made minors changes that could have caused problems (but had not at the time).

IMPROVEMENTS FOR VERSION 1.2

- Vastly improved terrain reading, patches at varying elevation with no patch separation. Z-buffer thrashing still an issue due to non-coplanar patches generated by PhotoSceneryX.
- Added "Donate" and "About" links.

IMPROVEMENTS FOR VERSION 1.1

- Changed the elevation method to terrain reading. Each patch was at a constant elevation, which caused visible image separation (a small bug).